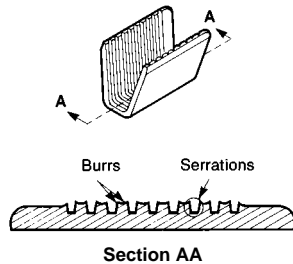


### Product Facts

- Compression crimp eliminates cold solder points, weld burns and wire embrittlement usually connected with thermal-type terminations
- Excellent tensile strength—vibration resistant
- Provides a superior electrical connection that is free of contaminants such as stripper residue and solder flux
- Precision formed, strip-fed terminals and splices terminated in AMP Automatic Machines assure highest possible production rates at the lowest applied cost
- Low wire consumption and the elimination of rejects caused by solder flux or heat damage results
- Precisely controlled crimp termination helps eliminate human error for maximum reliability



The basic design of the AMPLIVAR wire barrel encompasses two main areas: the burrs at the top of the serrations and the serrations themselves. During the crimping operation, the burrs pierce the insulation of the magnet wire and extrude the bare conductors into the serrations—creating ultimate metal-to-metal contact.



AMPLIVAR Splices are specifically designed to terminate magnet wire to itself or in combination with standard solid or stranded lead wire. The AMPLIVAR product line will accommodate a wire range from 400 to 13,000 CMA.

In a one-step crimping operation, the magnet wire is automatically ring-stripped of its insulation as it is forced into the wire barrel serrations. The result produces a high tensile strength, air-sealed

connection that is as resistant to corrosion as the insulated conductor.

As many as three magnet wires can be terminated simultaneously in one barrel. In addition, copper or aluminum magnet wire, or a combination of both, can be terminated. When required, copper or aluminum magnet wire can be combined with prestripped standard solid or stranded lead wires.

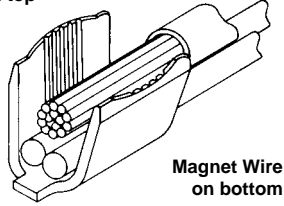
Depending on your specific application, AMPLIVAR Splices are available in 5, 7 and 9 serration versions as well as miniature and subminiature designs for terminations in the 400 to 1600 CMA range.

For complete product information, order Catalog 82221

Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA, 94080-6370 • Main Office: (650) 588-9200 • Outside Local Area: (800) 258-9200 • www.stevenengineering.com

### General Application Guidelines

Stranded Wire on top



Magnet Wire on bottom

To assist you in obtaining the optimum AMPLIVAR termination, the following guidelines are recommended:

1. All magnet wires must be placed in the bottom of the wire barrel before crimping. If lead wire is to be crimped in the same termination, it should be placed on top of the magnet wires.
2. Wire barrels are designed to accept a maximum of three insulated magnet wires plus stranded lead wires.
3. The ratio of magnet wire diameters crimped in any wire barrel should not exceed 2:1. This ratio is approximately a range from the largest to the smallest magnet wire of six sizes.
4. The sum of the circular mil area (CMA) of the magnet wires and any lead wires should not exceed the capacity of the splice.
5. The sum of the diameters of the individual magnet wires plus twice the terminal stock thickness must be equal to or less than the crimp width.
6. Magnet wire of 26 AWG [0.404 mm] or smaller should be used with 7-serration splices having "shallow serrations," and magnet wire of 28 AWG [0.32 mm] or smaller should be used with 9-serration splices having "shallow serrations" (part numbers identified with asterisk [\*] are in the tabular data on the following technical pages).
7. Magnet wire of 20 AWG [0.813 mm] or larger having an insulation

thickness heavier than "single film coated," should not be used with splices having "shallow serrations" (those part numbers marked with an asterisk [\*] in the tabular data on the following technical pages).

8. When aluminum magnet wire is used, splices and terminals must be tin plated.
9. Consult AMP for splice selection and recommendations for all non-standard applications.

For detailed specifications on crimping AMPLIVAR splices, request the appropriate AMP Specification Publication.

### Test Results

AMPLIVAR products have been subjected to the following tests without significant millivolt increase:

**Temperature Cycling**—  
25 cycles with each cycle consisting of 30 minutes at 125°C followed by 30 minutes at -65°C

**Heat Age**—  
96 hours at 150°C

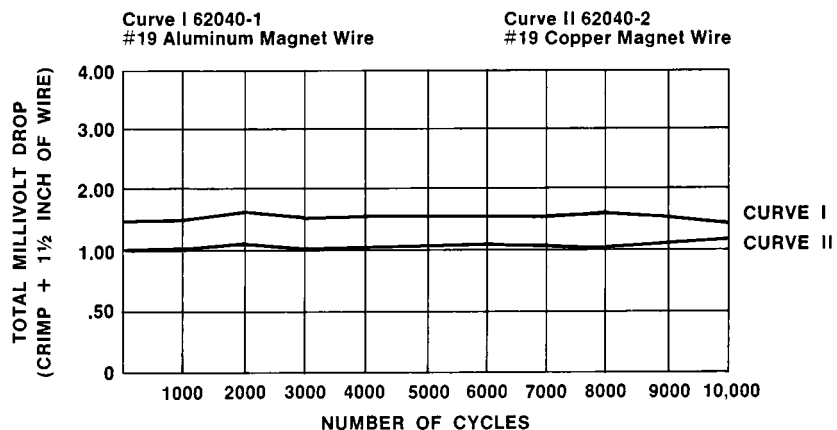
**Thermal Shock**—  
25 cycles with each cycle consisting of 30 minutes at 150°C followed by 30 minutes at -65°C

**Salt Spray**—  
96 hours at 35°C with a 5% salt solution spray

**Humidity**—  
96 hours at 90-95% relative humidity and 40°C

**Current Cycling**—  
10,000 cycles with each consisting of 3 minutes on and 3 minutes off at a current (25 amperes) which establishes a wire temperature of 150°C (see graphical results below)

### TYPICAL CURRENT CYCLING TEST RESULTS



### Suggested Splice Selection Procedure

Use the following guide to help you to determine the proper splice for your application:

1. Use 9-serration splices, tin plated when terminating aluminum magnet wire or combinations with aluminum magnet wire.
2. Use 9-serration splices for hermetic and severe environment applications.
3. Use splices identified with an asterisk [\*] when terminating 7-serration 26 AWG [0.404 mm] or smaller wires and 9-serration 28 AWG [0.32 mm] or smaller wires.
4. Calculate the total CMA of the magnet wires plus any lead wires to be terminated. Always use the coated magnet wire for CMA (see pages 13–16).
5. Calculate the total magnet wire diameters (see pages 13 and 14).
6. Select a splice for trial calculations. It should have the proper CMA range. Plating finish should be considered at this time.
7. Calculate the sum of the magnet wire diameters plus two splice stock thicknesses. If this total is less than the crimp width of the splice selected, it may be used. If the total is greater than the crimp width, a splice with a greater crimp width must be selected. Consult AMP for special wide tooling recommendations.

#### Example:

Selection of a Pigtail Splice to terminate the following wires:  
 One 28 AWG [0.32 mm] copper magnet wire.  
 One 22 AWG [0.643 mm] aluminum magnet wire.  
 One 18 AWG [0.8–0.9 mm<sup>2</sup>] 19-strand copper lead wire.

Calculate the total CMA (Procedure 4):  
 28 AWG [0.32 mm] coated magnet wire ..... 185 CMA  
 22 AWG [0.643 mm] coated magnet wire ..... 708 CMA  
 18 AWG [0.8–0.9 mm<sup>2</sup>] stranded lead wire ..... 1608 CMA  
 Total ..... 2501 CMA

Calculate the sum of the magnet wire diameters (Procedure 5):  
 28 AWG [0.32 mm] coated magnet wire ..... .0136 [0.35]  
 22 AWG [0.643 mm] coated magnet wire ..... .0266 [0.68]  
 Total ..... .0402 [1.03]

Select a terminal for trial calculations. Splice No. 62305-2, page 4 (Procedure 6):  
 CMA range ..... 600–3000  
 Stock thickness ..... .016 [0.41]  
 Crimp width ..... .110 [2.79]  
 9-serration, tin plated for aluminum magnet wire (Procedure 1).  
 Splice identified with asterisk [\*] for 28 AWG [0.32 mm] (Procedure 3).

Calculate the sum of the magnet wire diameters plus two splice stock thicknesses (Procedure 7):  
 $.0402 + (.016 \times 2) = .0722$   
 $[1.02 + (0.41 \times 2) = 1.84]$   
 $.0722 [1.84]$  is less than the splice crimp width of  $.110 [2.79]$ ; therefore, Part No. 62305-2 may be used.



For complete product information, order Catalog 82221

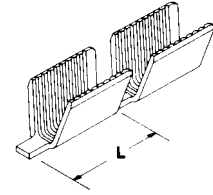
### AMPLIVAR Splices

#### 9 Serrations— Pigtail Type

##### Product Facts

(Plus All 7 Serration Facts)

- Splice length is increased on larger CMA splices for improved performance
- Splice CMA ranges are overlapped so that two splices are available for any given CMA
- Serration depths are varied within the splice to give optimum electrical/mechanical performance on all wire sizes
- Serration sidewall angles are varied to allow better wire stripping and serration fill
- Flat bottom of splice helps keep magnet wires on bottom as required during crimping
- Magnet wires 28 AWG [0.32 mm] and larger may be terminated without requiring shallow serrations



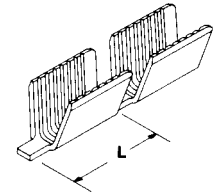
Wire Range CMA	Stock Thickness	Crimp Width	Dim. L	Material	Part Number
400–1500	.016 0.41	.080 2.03	.225 5.72	Tin Plated Brass	62303-2*
600–3000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	62304-2
600–3000	.016 0.41	.110 2.79	.225 5.72	Tin Plated Brass	62305-2*
1500–5000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	62306-2
1500–5000	.016 0.41	.110 2.79	.225 5.72	Tin Plated Brass	62307-2*
3000–7000	.020 0.51	.140 3.56	.265 6.73	Tin Plated Brass	62308-2
5000–10,000	.025 0.64	.180 4.57	.265 6.73	Tin Plated Brass	62309-2
7000–13,000	.025 0.64	.180 4.57	.265 6.73	Tin Plated Brass	62310-2
10,000–22,000	.030 0.76	.220 5.59	.340 8.64	Tin Plated Brass	62311-2

\*These splices are recommended for applications using wire size 28 AWG [0.32 mm] or smaller.

#### 7 Serrations— Pigtail Tail

##### Product Facts

- 6° taper on both crimper and anvil improves flex life of termination
- Longer “flat” on tooling improves electrical performance (.125 vs. .080 [3.18 vs. 2.03])
- Radius on wire entry end of splice prevents nicking wires and improves mechanical performance
- Additional serrations enhance stability of crimp
- Serrations are offset to sheared end to place additional serrations in “electrical” portion of crimped splice



Wire Range CMA	Stock Thickness	Crimp Width	Dim. L	Material	Part Number
600–3000	.020 0.51	.110 2.79	.225 5.72	Brass	62000-1
600–3000	.020 0.51	.110 2.79	.225 5.72	Brass	62157-1*
600–3000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	62000-2
600–3000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	62157-2*
1500–5000	.020 0.51	.110 2.79	.225 5.72	Brass	62040-2
1500–5000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	62040-1
3000–7000	.020 0.51	.140 3.56	.225 5.72	Brass	62001-1
3000–7000	.020 0.51	.140 3.56	.225 5.72	Tin Plated Brass	62001-2
7000–12,000	.025 0.64	.250 6.35	.225 5.72	Tin Plated Brass	62295-1
7000–12,000	.025 0.64	.250 6.35	.225 5.72	Brass	62295-2
7000–13,000	.025 0.64	.180 4.57	.225 5.72	Tin Plated Brass	62002-2

For complete product information, order Catalog 82221

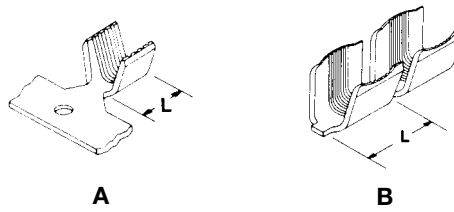
\*These splices are recommended for applications using wire size 26 AWG [0.404 mm] or smaller.

### AMPLIVAR Splices

#### 5 Serrations— Thru Type

##### Product Facts

- Wide range of thru splices
- Serrations centered in splice to achieve optimum electrical and mechanical performance in a thru splice
- CMA range accepts a wide variety of wire sizes and combinations



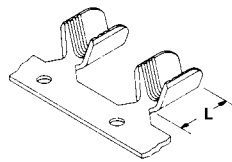
Type	Wire Range CMA	Stock Thickness	Crimp Width	Dim. L	Material	Part Number
A	2000–5400	.020 0.51	.110 5.08	.235 5.97	Brass	63564-1
A	10,000–16,000	.032 0.80	.180 4.57	.267 6.78	Tin Plated Brass	63561-1
A	10,400–22,900	.030 7.62	.300 7.62	.310 7.87	Tin Plated Brass	63562-1
B	600–3000	.020 0.51	.110 2.79	.225 5.72	Brass	42076-0
B	600–3000	.020 0.51	.110 2.79	.225 5.72	Brass	42192-1*
B	600–3000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	42192-2*
B	1500–5000	.020 0.51	.110 2.79	.225 5.72	Brass	41765
B	1500–5000	.020 0.51	.110 2.79	.225 5.72	Brass	42119-1*
B	1500–5000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	41899
B	3000–7000	.020 0.51	.140 3.56	.225 5.72	Brass	41766
B	3000–7000	.020 0.51	.140 3.56	.225 5.72	Tin Plated Brass	41900
B	7000–13,000	.025 0.64	.180 4.57	.225 5.72	Brass	41770
B	7000–13,000	.025 0.64	.180 4.57	.225 5.72	Tin Plated Brass	41904

\*These splices are recommended for applications using wire size 26 AWG [0.404 mm] or smaller.

#### Miniature Splice— Pigtail Type

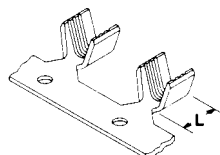
##### Product Facts

- The compactness of these splices makes them ideal for use in small subfractional motors, transformers, relays, solenoids, indicator lamps and small appliance terminations
- These splices provide the same reliability as the larger AMPLIVAR splices



Wire Range CMA	Stock Thickness	Crimp Width	Dim. L	Material	Part Number
200–850	.012 0.30	.055 1.40	.195 4.95	Tin Plated Brass	63431-1
480–1700	.014 0.36	.080 2.03	.195 4.95	Tin Plated Brass	62341-1


#### Subminiature Splice Thru or Pigtail Type



Wire Range CMA	Stock Thickness	Crimp Width	Dim. L	Material	Part Number
100–300	.010 0.25	.042 1.08	.080 2.03	Tin Plated Brass	63621-1
400–1600	.016 0.41	.070 1.78	.100 2.54	Tin Plated Brass	62194-2

For complete product information, order Catalog 82221

### Product Facts

- Terminates copper magnet wire
- Terminates all magnet wire film insulations
- Eliminates need for prestripping conductors
- Excess magnet wire is automatically trimmed during the termination procedure
- Simultaneously terminates two wires of the same size in one terminal (for splicing or bi-filing)
- Many lead wire attachment techniques available
- Eliminates post insulating
- Low insertion force
- Available in strip form or loose piece for semi-automatic, automatic or hand tool application
- Capable of producing up to 2000 terminations per hour with semi-automatic bench machine (based on four terminations per coil)
- High-speed automatic coil-winding machine terminations provide uniform reliability at lowest possible applied cost
- May be mass terminated
- Clean metal-to-metal interface produces stable, gas-tight electrical terminations free of oxides and other contaminants
- Eliminates lead wire handling throughout entire production process
- Varnish resist tab terminals are available for special applications
- Those products indicated are recognized under the Component Recognition Program of Underwriters Laboratories Inc., File No. E13288 

### Advantages

- Low cost
- Safety
- Versatility
- Reliability



Standard MAG-MATE Terminals bring insulation displacement technology to magnet wire terminations. The technique eliminates the need for prestripping the conductors. Insulated wire is positioned so precisely by the controlled terminating slots of the "U"-shaped design that the stamped and formed terminals can be pushed over the wire.

When application tooling pushes the terminal, the wire moves through the terminal's wide lead-in area, reducing it in width and reshaping it into an oval. As the wire passes into the narrow precise slots, small stripping devices penetrate the film insulation. Complete insulation displacement occurs and four areas of contact are made as the conductor is forced deep

into the slots by the terminal insertion process.

During the process, the wiping action between the wire and terminal removes all oxides or other contaminants present on both the conductor and the terminal slot walls, producing a clean, metal-to-metal interface and a stable, gas-tight electrical termination. The large areas of contact between the wire and the slot walls ensure reliable conduction of high currents.

Residual spring energy in the terminal causes the side walls of each slot to function as opposing cantilever beams. This constant pressure results in an intimate metal-to-metal contact, providing a reliable, long-term connection.

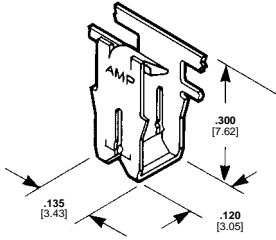
For complete product information, order Catalog 82221

### Terminals

#### Material and Finish:

Tin plated brass

#### Typical Cavity Size 2:



### Poke-In Terminals

Copper Magnet Wire Range		Lead Wire Range <sup>4</sup>		Stock Thickness	Part Numbers <sup>1,*</sup>
AWG	mm	AWG	mm <sup>2</sup>		
33-31 <sup>2</sup>	0.18-0.23	20-18	0.5-0.9	.010 0.25	62431-1
31-28	0.23-0.32	20-18	0.5-0.9	.012 0.30	1217234-1
30-27 <sup>2</sup>	0.25-0.36	20-18	0.5-0.9	.012 0.30	63636-1 <sup>5,6</sup> 62429-1
27-26 <sup>2</sup>	0.36-0.40	27-26	0.36-0.40	.016 0.41	1217192-1 <sup>8</sup>
27-23 <sup>2</sup>	0.36-0.57	20-18	0.5-0.9	.016 0.41	62935-1
25.5-24 <sup>2</sup>	0.43-0.51	25.5-24	0.43-0.51	.016 0.41	1217191-1 <sup>8</sup>
25-22 <sup>7</sup>	0.45-0.64	20-18	0.5-0.9	.016 0.41	63658-1
23.5-22 <sup>3</sup>	0.54-0.64	23.5-22	0.54-0.6	.016 0.41	1217190-1 <sup>8</sup>
22-20 <sup>3</sup>	0.64-0.81	20-18	0.5-0.9	.016 0.41	62420-1
19-17 <sup>3</sup>	0.91-1.15	20-18	0.5-0.9	.016 0.41	62833-1

<sup>1</sup> Strip product part numbers shown. See page 7145 for loose piece part number cross reference and tooling.

<sup>2</sup> Two magnet wires may be terminated in the same terminal slot if diameters are equal.

<sup>3</sup> Single magnet wire only.

<sup>4</sup> Solid or overcoated stranded lead wire only. Product will also accept Poke-In Tab Terminal shown below

<sup>5</sup> Special Nicker location.

<sup>6</sup> Special cavity detail required.

<sup>7</sup> Two magnet wires may be terminated in the same terminal slot if diameters are equal, except 22 AWG [0.64 mm].

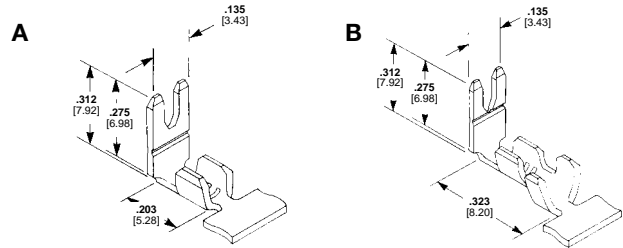
<sup>8</sup> Tin over nickel plating, special leaf.

\* Recognized under the Component Program of Underwriters Laboratories, Inc.

### Tab Terminals

#### Materials:

Tin plated brass



Type	Lead Wire Size		Ins. O.D.	Stock Thickness	Part Numbers <sup>1</sup>
	AWG	mm			
A	22-18	0.3-0.9	—	.018 0.46	62895-1*
B	22-18	0.3-0.9	.060-.100 1.52-2.54	.020 0.51	62896-1*

### Terminal

#### Material and Finish:

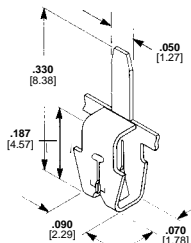
Tin plated brass, except where noted.

<sup>1</sup> Strip product part numbers.

\* Recognized under the Component Program of Underwriters Laboratories, Inc.

**Note:** All tab terminals accept stranded, fused stranded or solid lead wire

#### Typical Cavity Size 1:



### Posted Terminals

Copper Magnet Wire Range		Stock Thickness	Part Numbers
AWG	mm		
33-31 <sup>2</sup>	0.18-0.23	.010 0.25	62934-11
29-27 <sup>2</sup>	0.29-0.36	.012 0.30	1217196-1 <sup>3</sup>

<sup>1</sup> Loose piece product part number. Tin over copper plating.

<sup>2</sup> Two magnet wires may be terminated in the same terminal slot if diameters are equal.

<sup>3</sup> Tin over nickel plating.

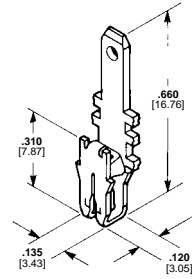
For complete product information, order Catalog 82221

### 110 Series Poke-In Combination FASTON Tab Terminals

**Material:**

Tin plated brass

**Typical Cavity Size 2:**



Copper Magnet Wire Range		Lead Wire Range <sup>3</sup>		Tab Size	Stock Thickness		Part Number <sup>1,4,*</sup>
AWG	mm	AWG	mm		Tab Section	Mag. Wire Section	
28–24 <sup>2</sup>	0.32–0.51	20–18	0.5–0.8	.020 × .110 0.51 × 2.79	.020 0.51	.012 0.30	63062-1

<sup>1</sup> Strip product part numbers.

<sup>2</sup> Two magnet wires may be terminated in the same terminal slot if diameters are equal, except 22 AWG [0.643 mm] which accepts single magnet wire only.

<sup>3</sup> Solid or overcoated stranded lead wire only.

<sup>4</sup> Varnish resist coating.

\* Recognized under the Component Program of Underwriters Laboratories, Inc.

**Notes:** <sup>1</sup> After insertion into plastic cavity, tab portion must be bent over 45°–90° or potted in to prevent pullout when mating receptacle is disconnected.

<sup>2</sup> .110 [2.79] Tab Terminals mate with compatible FASTON receptacles. Request AMP Catalog 82004.

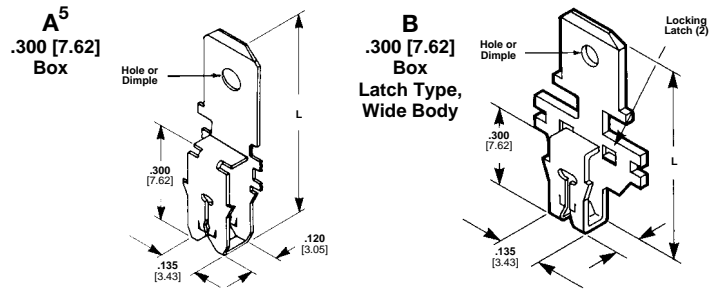
### 187 Series FASTON Tab Terminals

**Material:**

Tin plated brass

**Typical Cavity Sizes:**

Type A—Cavity Size 2



Type	Copper Magnet Wire Range		L Dimension	Tab Feature	Tab Size	Stock Thickness		Part Numbers <sup>1</sup>
	AWG	mm				Tab Section	Mag. Wire Section	
A	27–23 <sup>2</sup>	0.36–0.57	.625 15.88	Dimple	.020 × .187 0.51 × 4.75	.020 0.51	.016 0.41	62514-1*
	22–20 <sup>3</sup>	0.64–0.81	.625 15.88	Hole	.020 × .187 0.51 × 4.75	.020 0.51	.016 0.41	63663-1 <sup>4</sup>
B	27–23 <sup>3</sup>	0.36–0.57	.625 15.88	Dimple	.020 × .187 0.51 × 4.75	.020 0.51	.016 0.41	63256-1

<sup>1</sup> Strip product part numbers shown.

<sup>2</sup> Two magnet wires may be terminated in the same terminal slot if diameters are equal.

<sup>3</sup> Single magnet wire only.

<sup>4</sup> Varnish resist coating.

<sup>5</sup> After insertion into plastic cavity, tab portion must be bent over 45°–90° or potted in to prevent pullout when mating receptacle is disconnected.

\* Recognized under the Component Program of Underwriters Laboratories, Inc.

For complete product information, order Catalog 82221

### 250 Series FASTON Tab Terminals

**Material:**

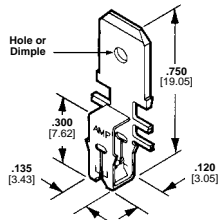
**Tin plated brass**

**Type A**—Use Cavity Size 2

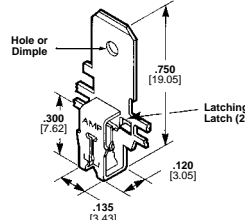
**Type B**—Use Cavity Size 3

**Type C**—Use Cavity Size 5

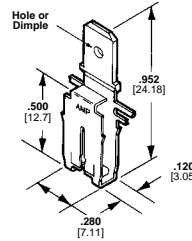
**Note:** .250 [6.35] tab terminals mate with compatible FASTON receptacles. Request AMP Catalog 82004.



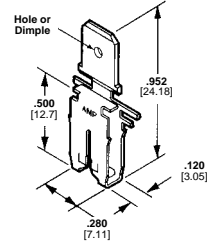
**A<sup>5</sup>**  
.300 [7.62] Box



**B<sup>6</sup>**  
.300 [7.62] Box  
Latch Type, Wide Body



**D<sup>7</sup>**  
.500 [12.7] Box



**E<sup>5</sup>**  
.500 [12.7] Box

Type	Copper Magnet Wire Range		Tab Feature	Tab Size	Stock Thickness		Part Numbers <sup>1</sup>
	AWG	mm			Tab Section	Mag. Wire Section	
A	27-23 <sup>2</sup>	0.36-0.57	Dimple	.032 × .250 0.81 × 6.35	.032 0.81	.016 0.41	62652-1*
B	27-23 <sup>2</sup>	0.36-0.57	Hole	.032 × .250 0.81 × 6.35	.032 0.81	.016 0.41	63571-1
D	16-15 <sup>2</sup>	1.29-1.45	Hole	.032 × .250 0.81 × 6.35	.032 0.81	.020 0.51	63459-3 <sup>4</sup>
	14-13 <sup>3</sup>	1.61-1.83	Hole	.032 × .250 0.81 × 6.35	.032 0.81	.020 0.51	63816-2 <sup>4</sup> 63816-1
E	19-17 <sup>2</sup>	0.91-1.15	Dimple	.032 × .250 0.81 × 6.35	.032 0.81	.020 0.51	62923-1 <sup>4</sup>

<sup>1</sup> Strip product part numbers shown. See page 7143 for loose piece part number cross reference and tooling.

<sup>2</sup> Two magnet wires may be terminated in the same terminal slot if diameters are equal.

<sup>3</sup> Single magnet wire only.

<sup>4</sup> Varnish resist coating.

<sup>5</sup> After insertion into plastic holder, tab portion must be bent over 45°-90° or potted in to prevent pullout when mating receptacle is disconnected.

<sup>6</sup> Special transition.

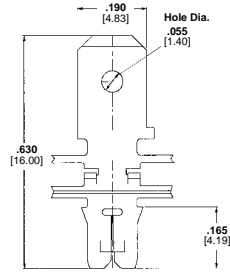
<sup>7</sup> After insertion into plastic cavity, tab portion **can not** be bent over. The body is potted in only.

\* Recognized under the Component Program of Underwriters Laboratories, Inc.

### Slim Line 187 Series FASTON Terminals

**Material:**

Tin over premilled brass

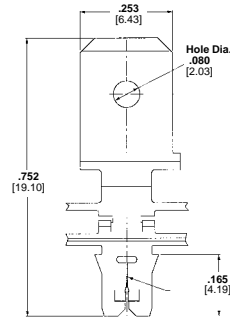


Copper Magnet Wire Range		Tab Size	Stock Thickness		Part Numbers
AWG	mm		Tab Section	Mag Wire Section	
33-31	0.18-0.23	.020 x .187 0.51 x 4.75	.020 0.51	.013 0.33	63710-1
30-28	0.25-0.32	.020 x .187 0.51 x 4.75	.020 0.51	.013 0.33	63711-1
23-20	0.57-0.81	.020 x .187 0.51 x 4.75	.020 0.51	.013 0.33	63713-2

### Slim Line 250 Series FASTON Terminals

**Material:**

Tin over premilled brass



Copper Magnet Wire Range		Tab Size	Stock Thickness		Part Number
AWG	mm		Tab Section	Mag Wire Section	
33-31	0.18-0.23	.032 x .250 0.81 x 6.35	.032 0.81	.013 0.33	63744-2

For complete product information, order Catalog 82221

### AMPLIVAR Product Terminator (APT)

#### Machine Ordering Information

A "Base Part Number" is selected from the Basic Machine Part Numbers table. Then, a dash number or numbers are selected from one of the other two tables depending on the type of product to be applied.

For example, the correct ordering number appears as 2-679452-4.

#### Basic Machine Part Numbers

Machine Features			Model	Base Part Number*	
Precision Adjust	Crimp Quality Monitor	Programmable Crimp-Height Sequencing		Pigtail-Type Splice	Direct Connect Contact
Manual	Not Included	Not Included	APT II	□-679450-□	□-679454-□
Manual	Included	Not Included	APT II/CQM	□-679451-□	□-679455-□
Automatic	Included	Not Included	APT IIIA	□-679452-□	□-679456-□
Automatic	Included	Included	APT IIIA	□-679453-□	□-679457-□

\*See tables below for suffix and prefix dash numbers which indicate product to be applied, voltage requirement and wire stuffer option.

**Note:** Kits are available to upgrade the basic machines listed above.

#### Pigtail-Type Splice (AMPLIVAR) Suffix and Prefix Dash Numbers

Crimp Width	120 VAC Machine	120 VAC Machine with Wire Stuffer	120 VAC Machine	240 VAC Machine with Wire Stuffer	Pigtail-Type Splice Base Number**
.250 6.35	( )-1	1-( )-4	2-( )-7	4-( )-0	62295
.220 5.59	( )-2	1-( )-5	2-( )-8	4-( )-1	62310
.180 4.57	( )-3	1-( )-6	2-( )-9	4-( )-2	62002
.180 4.57	( )-4	1-( )-7	3-( )-0	4-( )-3	62310
.180 4.57	( )-5	1-( )-8	3-( )-1	4-( )-4	62309
.180 4.57	( )-6	1-( )-9	3-( )-2	4-( )-5	62001
.140 3.56	( )-7	2-( )-0	3-( )-3	4-( )-6	62201
.140 3.56	( )-8	2-( )-1	3-( )-4	4-( )-7	42779 62001
.140 3.56	( )-9	2-( )-2	3-( )-5	4-( )-8	62308
.140 3.56	1-( )-0	2-( )-3	3-( )-6	4-( )-9	62306
.110 2.79	1-( )-1	2-( )-4	3-( )-7	5-( )-0	42775 42776 62040 62306 62307
.110 2.79	1-( )-2	2-( )-5	3-( )-8	5-( )-1	42777 42778 62000 62157 62200 62304 62305
.080 2.03	1-( )-3	2-( )-6	3-( )-9	5-( )-2	62303

#### Loose Piece Parts Cross Reference

Part Numbers		
Strip	Loose Piece	Hand Tool
62420-1	62524-1	274250-2
62429-1	62526-1	274250-2
62431-1	62527-1	274250-2
62513-1	62663-1	274260-2
62652-1	62657-1	274282-1
62653-1	62658-1	274282-1
62935-1	63044-1	274250-2
63064-1	63263-1	274282-1
63155-1	63336-1	274282-1
63464-3	63598-1	274278-1

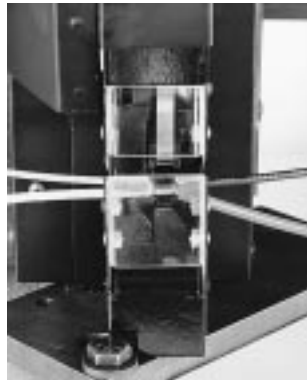
#### Direct Connect Contact (AMPLIVAR) Suffix and Prefix Dash Numbers

120 VAC Machine	240 VAC Machine	Direct Connect Contact Base Number**
( )-1	( )-6	63455
( )-2	( )-7	63454
( )-3	( )-8	63453
( )-4	( )-9	63549
( )-5	1-( )-0	63548

\*\*See Catalog 82221 for product specifications.

For complete product information, order Catalog 82221

### Tooling



#### Standard Style Applicator for Large CMA Splice, Part Number 566372-1

This applicator was designed specifically to apply AMP 5 000-16 000 CMA Splice, Part Number 63625-1. It features a highly-visible, close-up crimp area—less than 1 [25] from the front of the guard. You can easily splice multiple wires by simply rotating them down through the front of the guard into the crimp area.

It is an air-feed applicator, and can be used with Model "K" Part Number 1-471273-2 or 1-471273-3.

#### Circular Mil Area (CMA) and Diameter for Magnet Wires (AWG Wire Size Range 52–25½)

### Technical Information

AWG Bare Wire	Bare Wire Dia.		CMA Bare	Single Film Coated Dia.		CMA Single Film Coated	Heavy Film Coated Dia.		CMA Heavy Film Coated
	in.	mm		in.	mm		in.	mm	
52	.0008	.020	0.6	.0010	.025	1.0	.0011	.028	1.2
51	.0009	.023	0.8	.0011	.028	1.2	.0012	.031	1.5
50	.0010	.025	1.0	.0012	.031	1.5	.0013	.033	1.7
49	.0011	.028	1.2	.0013	.033	1.7	.0014	.035	2.0
48	.0012	.031	1.5	.0014	.035	2.0	.0015	.038	2.2
47	.0014	.035	2.0	.0016	.040	2.5	.0018	.045	3.1
46	.0016	.040	2.5	.0017	.043	2.9	.0019	.048	3.6
45	.0018	.045	3.1	.0019	.048	3.6	.0021	.053	4.4
44	.0020	.050	4.0	.0022	.056	4.8	.0025	.063	6.2
43	.0022	.056	4.8	.0025	.063	6.2	.0027	.069	7.3
42	.0025	0.06	6.3	.0028	0.07	8	.0030	0.08	9
41	.0028	0.07	7.8	.0031	0.08	10	.0034	0.09	12
40	.0031	0.08	9.6	.0035	0.09	12	.0038	0.10	14
39	.0035	0.09	12	.0039	0.10	15	.0043	0.11	18
38	.0040	0.10	16	.0045	0.11	20	.0049	0.12	24
37	.0045	0.11	20	.0050	0.13	25	.0055	0.14	30
36	.0050	0.13	25	.0056	0.14	31	.0060	0.15	36
35	.0056	0.14	31	.0062	0.16	38	.0067	0.17	45
35	.0056	0.14	31	.0062	0.16	38	.0067	0.17	45
34	.0063	0.16	40	.0069	0.18	48	.0075	0.19	56
33	.0071	0.18	50	.0077	0.20	59	.0085	0.22	72
32	.0080	0.20	64	.0084	0.21	71	.0095	0.24	90
31	.0089	0.23	79	.0092	0.23	85	.0105	0.27	110
30½	.0095	0.24	90	.0099	0.25	98	.0111	0.28	123
30	.0100	0.25	100	.0106	0.27	112	.0116	0.29	135
29½	.0107	0.27	115	.0114	0.29	130	.0123	0.31	151
29	.0113	0.29	128	.0120	0.30	144	.0130	0.33	169
28½	.0120	0.30	144	.0126	0.32	159	.0137	0.35	187
28	.0126	0.32	159	.0136	0.35	185	.0144	0.37	207
27½	.0134	0.34	180	.0144	0.37	207	.0153	0.39	234
27	.0142	0.36	202	.0152	0.39	231	.0161	0.41	259
26½	.0151	0.38	225	.0160	0.41	256	.0170	0.43	289
26	.0159	0.40	258	.0170	0.43	289	.0179	0.45	320
25½	.0169	0.43	289	.0180	0.46	324	.0190	0.48	361

For complete product information, order Catalog 82221

### Circular Mil Area (CMA) and Diameter for Magnet Wires (AWG Wire Size Range 25–8)

### Technical Information

AWG Bare Wire	Bare Wire Dia.		CMA Bare	Single Film Coated Dia.		CMA Single Film Coated	Heavy Film Coated Dia.		CMA Heavy Film Coated
	in.	mm		in.	mm		in.	mm	
25	.0179	0.45	320	.0190	0.48	361	.0200	0.51	400
24 <sup>1/2</sup>	.0190	0.48	361	.0200	0.51	400	.0212	0.54	449
24	.0201	0.51	404	.0213	0.54	455	.0223	0.57	497
23 <sup>1/2</sup>	.0214	0.54	458	.0226	0.57	511	.0236	0.60	557
23	.0226	0.57	511	.0238	0.60	566	.0249	0.63	620
22 <sup>1/2</sup>	.0240	0.61	576	.0252	0.64	635	.0263	0.67	692
22	.0253	0.64	640	.0266	0.68	708	.0277	0.70	767
21 <sup>1/2</sup>	.0269	0.68	724	.0282	0.72	795	.0293	0.74	858
21	.0285	0.72	812	.0298	0.76	888	.0310	0.79	961
20 <sup>1/2</sup>	.0303	0.77	918	.0315	0.80	992	.0328	0.83	1,076
20	.0320	0.81	1,024	.0334	0.85	1,116	.0346	0.88	1,197
19 <sup>1/2</sup>	.0340	0.86	1,156	.0353	0.90	1,246	.0365	0.93	1,340
19	.0359	0.91	1,289	.0373	0.95	1,391	.0386	0.98	1,490
18 <sup>1/2</sup>	.0381	0.97	1,452	.0395	1.00	1,560	.0409	1.04	1,673
18	.0403	1.02	1,624	.0418	1.06	1,747	.0431	1.09	1,858
17 <sup>1/2</sup>	.0428	1.09	1,832	.0443	1.13	1,962	.0456	1.16	2,079
17	.0453	1.15	2,052	.0468	1.19	2,190	.0482	1.22	2,323
16 <sup>1/2</sup>	.0481	1.22	2,314	.0496	1.26	2,460	.0510	1.30	2,601
16	.0508	1.29	2,581	.0524	1.33	2,746	.0583	1.37	2,894
15 <sup>1/2</sup>	.0540	1.37	2,916	.0560	1.42	3,136	.0570	1.45	3,249
15	.0571	1.45	3,260	.0587	1.49	3,446	.0602	1.53	3,624
14 <sup>1/2</sup>	.0606	1.54	3,672	.0622	1.58	3,869	.0639	1.62	4,082
14	.0641	1.63	4,109	.0658	1.67	4,330	.0675	1.71	4,556
13 <sup>1/2</sup>	.0681	1.73	4,638	.0698	1.77	4,872	.0711	1.81	5,055
13	.0720	1.83	5,184	.0738	1.87	5,446	.0749	1.90	5,670
12 <sup>1/2</sup>	.0764	1.94	5,837	.0783	1.99	6,131	.0793	2.01	6,188
12	.0808	2.05	6,529	.0827	2.10	6,839	.0838	2.13	7,090
11 <sup>1/2</sup>	.0858	2.18	7,362	.0877	2.23	7,691	.0888	2.26	7,885
11	.0907	2.30	8,226	.0927	2.35	8,593	.0938	2.38	8,892
10 <sup>1/2</sup>	.0963	2.35	9,274	.0983	2.50	9,663	.0994	2.52	9,880
10	.1019	2.59	10,384	.1040	2.64	10,820	.1050	2.67	11,151
9	.1144	2.91	13,087	.1166	2.96	13,600	.1177	2.99	13,971
8	.1285	3.26	16,512	.1307	3.32	17,080	.1318	3.35	17,530

For complete product information, order Catalog 82221

### Technical Information

**Circular Mil Area  
(CMA) and Diameter  
for Lead Wires  
(AWG Wire Size  
Range 30-8)**

Wire Size	Strands		Wire Area in Circ. Mils
	Numbers	Dia. (Mils)	
30	7	4.0	112
30	1	10.0	100
28	7	5.0	175
28	19	3.1	181
28	1	12.6	159
27	7	5.6	219
27	1	14.2	202
26	6	6.3	238
26	10	5.0	250
26	16	4.0	256
26	8	5.6	251
26	1	15.9	253
26	26	3.1	250
26	7	6.3	278
26	3	10.0	300
26 AN	12	5.0	300
25	10	5.6	314
25	8	6.3	318
25	1	17.9	320
24	10	6.3	397
24	8	7.1	403
24	16	5.0	400
24	4	10.0	400
24	1	20.1	404
24	26	4.0	416
24	13	5.6	408
24	7	8.0	448
24	56	2.8	439
24 AN	19	5.0	475
23	10	7.1	504
23	8	8.0	512
23	1	22.6	511
—	21	5.0	525
22	6	10.0	600
22	8	8.9	634
22	16	6.3	635
22	10	8.0	640
22	1	25.3	640
22	7	10.0	700
22 AN	19	6.3	754
20	10	10.0	1,000
20	1	10.0	1,024
20	26	6.3	1,032
20	7	12.6	1,111
20 AN	19	7.9	1,186
18	19	9.2	1,608
—	16	10.0	1,600
18	1	40.3	1,624
18	7	15.2	1,617
18	65	5.0	1,625
18	7	15.3	1,639

Wire Size	Strands		Wire Area in Circ. Mils
	Numbers	Dia. (Mils)	
—	41	6.3	1,627
—	7	16.0	1,792
18 AN	19	10.0	1,900
18 AN	19	11.3	2,426
16	7	19.2	2,580
16	1	50.8	2,581
16	65	6.3	2,580
16	19	11.7	2,601
16	105	5.0	2,625
—	26	10.0	2,600
16	7	20.0	2,800
14 AN	19	14.2	3,831
14	37	10.5	4,079
14	7	24.2	4,099
14	19	14.7	4,106
14	1	64.4	4,109
—	41	10.0	4,100
14	105	6.3	4,167
14	168	5.0	4,200
14	84	7.1	4,234
—	7	25.3	4,481
12	19	17.9	6,088
12 AN	19	17.9	6,088
12	259	5.0	6,475
12	19	18.5	6,503
12	7	30.5	6,512
12	37	13.3	6,545
12	1	80.8	6,529
12	165	6.3	6,549
12	84	8.9	6,654
10	7	36.0	9,072
—	37	16.0	9,472
10	414	5.0	10,350
10	37	16.7	10,319
10	1	101.9	10,384
10	7	38.5	10,376
10	19	23.4	10,404
—	41	15.9	10,365
10	105	10.0	10,500
9	7	43.0	12,943
9	1	114.4	13,087
9	525	5.0	13,125
8	7	45.0	14,175
8	133	11.1	16,386
8	37	21.1	16,472
8	1	128.5	16,512
8	7	48.6	16,533
8	19	29.5	16,534
8	49	18.4	16,589
8 AN	133	11.3	16,982

For complete product information, order Catalog 82221

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**Technical Documents**

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A variety of technical documents are available for your use:

**Product Specifications** describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-2012—Standard MAG-MATE Splices and Terminals

108-2016—Mini MAG-MATE Terminals

**Application Specifications** describe requirements for using the product in its intended application and or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-2002—AMPLIVAR 7-Serration Pigtail Splices

114-2003—AMPLIVAR 9-Serration Pigtail Splices

114-2005—AMPLIVAR Subminiature Thru Splices

114-2006—AMPLIVAR Subminiature Pigtail Splices

114-2009—AMPLIVAR 5-Serration Thru Splices

114-2016—AMPLIVAR Miniature Pigtail Splices

114-2050—Poke-In Tab MAG-MATE Terminals

114-2069—Standard MAG-MATE .187 [4.75] Box Height Terminals

114-2046—Standard MAG-MATE .300 [7.62] Box Height Terminals

114-2066—Standard MAG-MATE .500 [12.7] Box Height Terminals

114-2067—Standard MAG-MATE .300 [7.62] Box Height Latch-In Terminals Narrow Body

114-2094—Standard MAG-MATE .300 [7.62] Box Height Latch-In Terminals Wide Body

114-2047—Mini MAG-MATE Terminals

For complete product information, order Catalog 82221